ZyXEL

Unleash Networking Power

Top Network Upgrades

5 Upgrades Your Network Needs *- provided by James E. Gaskin**

Pick the philosophy used in your company:

- **If it ain't broke, don't fix it.**
- **A stitch in time saves nine.**

Those companies following the **"if it an't broke"** cliche will find this document quite useful when the network does break, as the cliche promises it eventually will. In your panic, I hope you find and upgrade the right network component quickly.

Those companies following the **"Stitch in time"** cliche will find this document a wonderful roadmap as you constantly improve and upgrade your network. Of course, your life will lack the heart pounding excitement people get when their networks break, because you are upgrading the weak links on a regular basis. You'll have to get your aerobic exercise the old fashioned way, but your smooth running network will leave you plenty of leisure time.

Don't try and redo your entire network all at once. First, your boss won't give you the budget, but second and more importantly, you only want to change one thing at a time on your network. Change something, monitor the network and make sure it returns to normal, then change something else.

1 Gigabit Ethernet

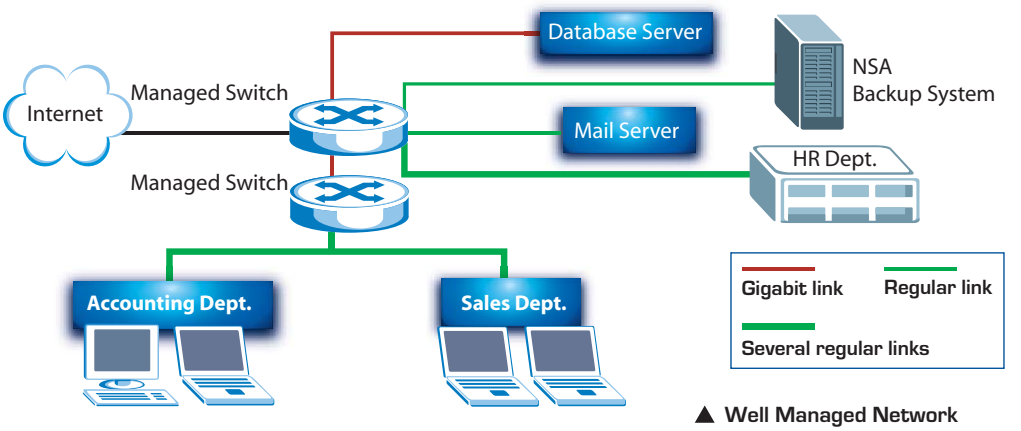
Physical network component discussions may be dull, but a slow network is deadly. Any network cabling component more than one year old probably uses 10/100Base-T Ethernet, which runs at either 10 Mega Bits Per Second or 100 Mbps. When Ethernet became popular in the mid-1980's, it ran at 10Mbps. In 1999, Ethernet speeds of 1 Gigabits Per Second, called Gigabit Ethernet and/or 1000Base-T, became available to run over the same twisted pair Cat 5 wiring used by 100Base-T.

Both ends of the network connection must run at Gigabit Ethernet speeds: the client adapter and wiring switch. Most newer servers and network appliances, and some new personal computers, include a Gigabit Ethernet port as standard equipment. If not, add-in PCI or even USB 2.0 adapters can upgrade a computer's networking speed by a factor of 10.

Your wiring switch must also support Gigabit Ethernet. Switches may include 4, 5, 8, 16, or 24 Gigabit Ethernet ports. Some mix Gigabit Ethernet and 100Base-T ports. Many companies ease into the speed upgrade, turbo-charging their servers, storage devices, and backup units only. If you have a new and fast backup system, your old network will get congested and slow your backups. After the client adapter and switch upgrade, backups between one server and the backup appliance will run as fast as the backup device can accept data, reducing backup time. Network file transfer speeds will also jump into high gear.

2 Managed Switches

When moving to Gigabit Ethernet, buying managed switches adds a bit more to the budget but adds much more network control and management. Older switches either work or don't; pass all traffic or none. Managed switches can keep data and voice traffic separate using Quality of Service features so Voice over Internet Protocol phone calls and streaming media file feeds take precedence over data traffic. You can monitor which devices generate the most traffic, and shut down a network connection remotely in case of a virus attack or other security breach.



▲ Well Managed Network

3 Higher Speed Wireless Connections

Your early wireless client adapters and access points paid for themselves long ago, and need to be retired to make way for products supporting 802.11g or 802.11a wireless protocols. The original 802.11b devices have a maximum throughput of 11 Mega Bits Per Second (11Mbps) but 802.11g and 802.11a devices run at a minimum of 54 Mbps, and often higher with proprietary speed boosting techniques. MIMO (Multiple Input Multiple Output) technology extends range and speeds even farther and faster.

Step up in wireless speeds so you can transfer files faster, support audio and video transfers, and use portable phones that run over your data network rather than the cellular company's network. Faster is always better in networking, and equipment providing wireless speed improvements cost less today than the original wireless equipment you bought several years ago. Plus, the newer, faster wireless devices do a much better job with security.

4 PoE Access Points

Although it looks like a homage to Edgar Allen, PoE is really Power Over Ethernet. One of the four pair of wires in an Ethernet cable carries enough current to power small devices. This feature greatly reduces the installation time and cost of adding wireless access points.

You may wonder how this saves time or money, since you still have to run an Ethernet cable to the wireless access point location. Answer: PoE carries such low voltage the cables do not need to be placed inside electrical conduit to satisfy building code regulations. No conduit means no electrical contractors and expensive wiring installations. Yes, PoE switches cost a few extra dollars, but you'll keep the electricians out of your building and Accounts Payable.

5 VoIP WiFi Phone

You already know that VoIP (Voice over Internet Protocol) saves you money on phone lines and long distance calls. By fusing VoIP with WiFi data networking, your company phones can stop squatting on desks and start riding in employee pockets.

Turn off the public address system, because you'll no longer have to interrupt every employee to find the wandering shipping clerk, busy computer tech, or chatty sales person. Dial their extension, and let VoIP over WiFi connect the call to their phone no matter where they are in the building.

▲ **Application Scenarios**

Last Words of Advice

> Don't change two things at once.

> Plan your budget so you can regularly upgrade your network. Just like your car needsb regular maintenance, schedule regular network upgrades.

> Housing developments must add streets and electrical lines to support new occupants, and you must improve the network before new users appear.

> A good network will be invisible to your users. A great network will surprise users with regular improvements.

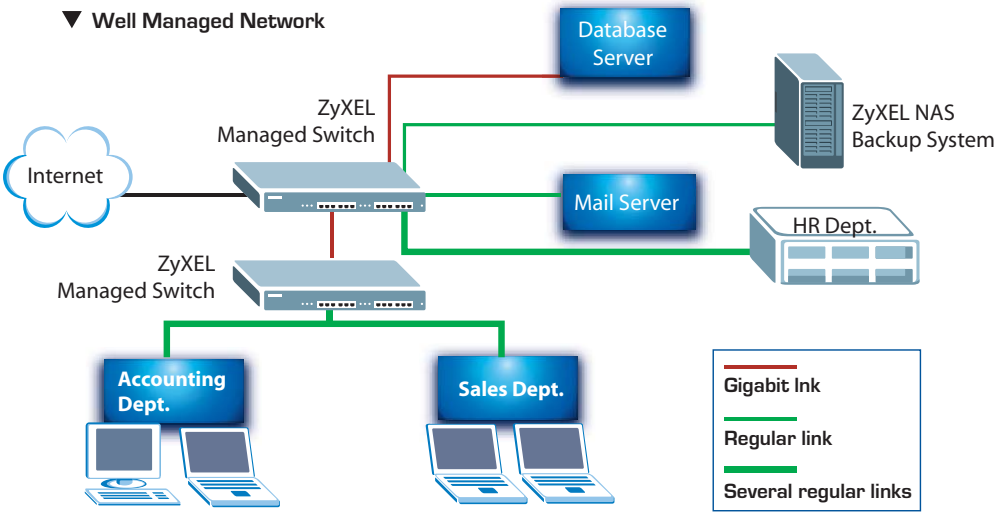
ZyXEL Solutions

1 Gigabit Ethernet and Manage Switches

Speed and security is the foundation of any business class network. The faster your network, the more productive you are. The more secure your network is, the more confidence you have in the information passed. Because of this, it is imperative that you equip your network with a switch that is fast, secure, and easy to manage.

ZyXEL's managed gigabit and fast Ethernet switches offer advanced security, high speeds and greater network control with easy management features for smooth and efficient business operations. Setting configurations on ZyXEL switches include our intuitive Web GUI, our advanced Telnet CLI and our industry standard SNMP support. However you decide to manage your switch, the choice is yours.

▼ **Well Managed Network**

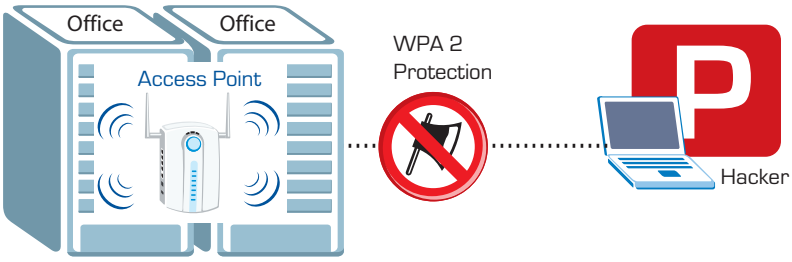


Product	Description	Ports	Dual Personality Ports (GbE/SFP)	Total Ports	Gbps (Switching Capability)	Mbps	Support
ES-2108 Series	Layer 2 Managed Fast Ethernet Switch	8	1	9	3.6		1) 802.1Q and Port Based VLAN 2) MAC/Port Security 3) Port based Bandwidth Control 4) PoE Support
ES-2024A		24	2	26	8.8	10/100	
ES-3124 Series	Layer 2+ Managed Fast Ethernet Switch	26	2	28	12.8		1) 4G Uplink Ports 2) L2~L4 ACL for prioritization and filtering 3) High redundancy with RSTP /MRSTP, and LACP 4) BPS Backup Power Support 5) PoE Support
ES-4124	Layer 3 Managed Fast Ethernet Switch	24	2	26	12.8		1) BPS Backup Power Support 2) L2~L4 ACL for prioritization and filtering 3) High redundancy with RSTP /MRSTP, VRRP and LACP
GS-3012	Layer 2+ Managed Gigabit Ethernet Switch	8	4	12	24	100/1000	1) BPS backup power support 2) L2~L4 ACL for prioritization and filtering 3) High redundancy with RSTP /MRSTP, and LACP
GS-2024	Layer 2 Managed Gigabit Ethernet Switch	22	2	24	48		1) 802.1Q and Port Based VLAN 2) MAC/Port Security 3) Port based Bandwidth Control
G680T	PCI Network Adapter	N/A	N/A	N/A	N/A	10/100/1000	1) 32 bit 2) Wake-on-LAN 3) ACPI Support 4) VLAN Support

2 Wireless Security/Speed/PoE

Wireless security is one area of technology that is continually improving and changing. It is imperative to the success of your business that you keep your network secure with the latest security standards available on the market while delivering a fast connection.

ZyXEL is a network security leader. Due to our superior understanding of the market we are able to offer you the most robust protection from hackers, network intruders and other hazardous threats. With everything from WPA to WPA2 security, speeds of anywhere from 54 Mbps to 300 Mbps and all the management features you could possibly need, our diverse line of products are able to meet your specific needs. You decide what works best for your business.



▲ **Secure Wireless Network**

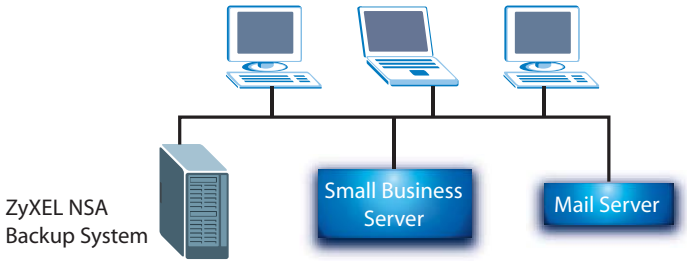
Product	Description	Speed	Security	802.11 a/b/g/n	Other Features	PoE Support
G2000 Plus v2	4 Port Wireless Access Point/ Router	54 Mbps	WPA/ WPA2	802.11 b/g	Built-in PEAP Server	No
G-3000	Wireless Access Point/Bridge/ Repeater				PEAP Authentication, Expansion Slot for 2nd Radio	Yes
G-3000H	Wireless Access Point/Bridge/ Repeater				PEAP Authentication	Yes
G-4100 v2	Wireless Hotspot Gateway w/ Printer		WEP/ WPA		N/A	Yes
G-470	Wireless Ethernet Bridge		WPA/ WPA2		Built-in 802.1x supplicant, External Signal Strength Indicator	Yes
NBG-415N	Broadband Router	300 Mbps	WPA/ WPA2	Draft 802.11n	StreamEngine /QoS/WMM	No
NWD-370	PCI Adapter				3 removable Antennas/WMM	
NWD-170N	Cardbus Adapter				WMM	

3 Storage

Network Attached Storage units provide large amounts of storage to users by connecting directly to the office LAN. The high speeds of NAS make it perfect for use as central storage or as an alternative to tapes as a backup solution for the office and RAID-5 technology allows you to be confident of the integrity of your data. ZyXEL's NAS solution, the NSA-2400, offers growing businesses three key benefits that include file sharing, file server consolidation for greater flexibility and efficiency through centralized data management and a comprehensive backup solution for data protection and disruption-free business. The NSA-2400 is fully configurable based on what drives the user buys and installs.

NSA-2400

> Up to 2 Terabytes Capacity
> Faster read/write speeds in its class
> Easy drive installation and replacement
> Ties in to your existing Windows network for easy user management
> Includes Genie's backup software solution for Windows clients (unlimited licenses)
> Simple to use web interface for setup and management



▲ **Data: Storage, Sharing, and Protection**

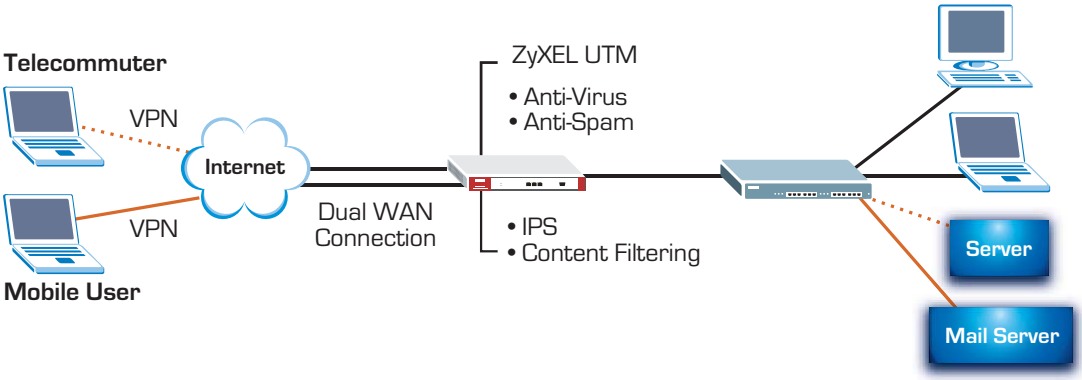
4 UTM/Dual WAN/VPN

Every year companies lose billions of dollars when forced to halt work and deal with internet attacks. Most attacks are completely avoidable with the right security measures in place. It is important that you protect your business from the inside out with the right types of firewalls inside your office as well as the right types of VPN tunnels in place to securely connect to your network from the outside. With the right security measures in place you can ward off sophisticated hackers and protect your investments.

ZyXEL offers a complete line of business networking security products that cover a wide range of applications providing users with increased Return-On-Investment, by minimizing maintenance, while providing a highly available and secure network. With firewalls ranging from 1 to 100 VPN tunnels, you will be sure to keep your business up and running with ease thanks to the VPN Setup Wizard (Web GUI). ZyXEL's firewalls come with anti-virus features from Kaspersky, content filtering from Blue Coat and anti-spam from Mail Shell. In addition, ZyXEL's security products boast SecuAssic chipset technology to keep the performance up with multiple services running simultaneously.

Product	VPN Tunnels	Firewall Throughput	Max. Firewall Users	ISCA Certified Firewall/VPN	Fail Over/ Load Balancing	AV/IDP*	Anti-Spam*	Content Filtering*
ZyWALL 5 UTM	10	65 Mbps	Unlimited	Yes	No	Yes	Yes	Yes
ZyWALL 35 UTM	35	70 Mbps			Yes			
ZyWALL 70 UTM	100	90 Mbps			Yes			
ZyWALL SSL-25	25	TBD			No			

*Subscription Service Required



▲ Secure Corporate Network

5 VoIP

The latest advancements in VoIP (Voice over Internet Protocol) technology has the ability to save you and your business money on phone lines and long distance calls. ZyXEL offers two VoIP products designed to cater to your needs while saving you money.

P-2000W v2

> 802.11b
> Wireless Intercom Features
> Great Voice Quality
> Easy Setup

P-2000W v3

> WLAN 802.11g
> WPA-PSK Security
> Calling Features: Caller ID, Call Hold, Call Waiting, Call Forward, Call Transfer
> Longer Standby Time

▲ Application Scenarios

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